"Integration In Department of Defense Information Management Initiative"

The Department of Defense's (DoD) Information Management (IM) initiative is the largest program of its kind ever conceived by any U.S. business organization. The initiative calls for a major reengineering and restructuring of business methods and administrative processes throughout the DoD.

From 1989 to present, DoD moved from concentrating on improving information management in selected business operations, such as contract payment, civilian payroll, distribution centers, and medical applications, to applying Defense IM methods to all other DoD mission areas, including command and control and intelligence. Each major mission area is made up of one or more functional areas, and each functional area is made up of one or more functional activities.

Integrating the functions, information resources, and information system support environment of the Department involves coordinating several complementary initiatives. Not all these initiatives are directly managed from within a functional area but across several functional and technical areas. Planning and executing the interactions among these initiatives requires understanding what integration means, and where actions to achieve integration need to occur.

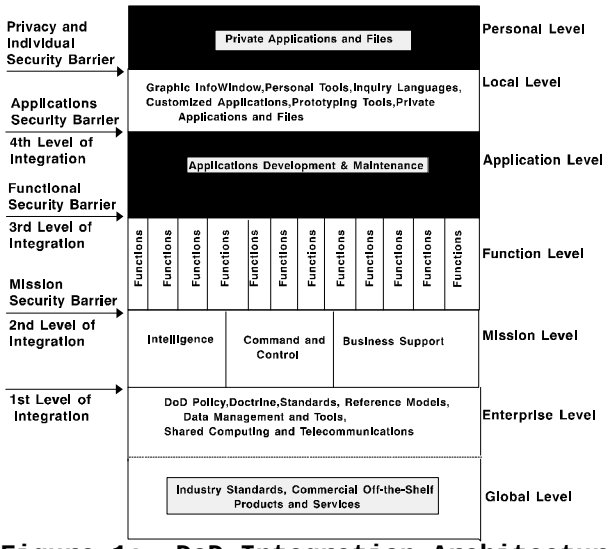

Figure 1: DoD Integration Architecture

A simplified hierarchical "DoD Integration Architecture" (see Figure 1) provides the basis for discussing the meaning of integration, for identifying key intersections (or boundaries) within the framework, and for assigning responsibilities for managing integration at those intersections. The integration architecture has seven levels: the global level, the DoD-wide enterprise level, the mission level, the function level, the application level, the local level, and the personal level. Rules developed at higher levels are inherited and applicable at lower levels, and then extended to meet specific requirements across all levels. Integration issues must be addressed between each level. Except at the global, DoD-wide enterprise and the personal levels, integration issues must also be addressed among the subdivisions within each level.

The Global level contains the industry standards and commercial off-the-shelf (COTS) products and services which DoD incorporates into its infrastructure. The Enterprise Level includes those elements of information management that are mandatory across the entire Department. This includes DoD policy and doctrine, implementing information on technology capabilities (e.g., technical and data standards, reference models and technical architectures, methods and tools, and shared computing and telecommunications services). The Mission Level includes the major missions of the Department. Here areas of specialization and focus emerge, where mandatory DoD-wide functional and technical requirements are supplemented with mission specific requirements and capabilities.

At the Function Level lie the functional areas and functional activities of the Department, and the subject-matter databases that support them. Integration issues occur among and across functional areas as well as between levels. The Application Level includes the development, maintenance, and operation of the information system applications that provide required automation support to the Department's functions. Integration at the boundary between the application level and the function level encompasses access to subject-matter databases and other system functionality issues that enable the effective operation of DoD information technology and information services.

The Local Level addresses customer support requirements that involve integration with both the application and personal levels. The Personal level serves to preserve privacy, individual choice, and personal preference at the desktop or workstation.

Historically, the Department has viewed integration vertically. Efforts were made to integrate among the functional activities which constituted the functional areas. This perpetuated the development of "functional stovepipes."

The Defense IM program views integration as an iterative activity occurring within and across many processes. Key to this concept is that integration must occur vertically, horizontally, and from numerous other vectors within the Enterprise.

Integration must be viewed from an infrastructure perspective with aspects of programmatic, data, hardware, software, communications and security characteristics. Each characteristic will apply vertically within and horizontally across functional areas. Within a functional area, programmatic integration will range from the development of an AIS supporting specific processes up to and including programmatic budget decisions at the enterprise level. Functional integration between functional areas will occur as related processes are identified and addressed. Physical data integration will provide shared data bases within a functional area, and, through the operationalizing of the DoD Data Administration program and the DoD Data Repository System (DDRS), across the Department as a whole. Hardware, software, communications and security characteristics which will enable the integration will themselves be integrated through the development and utilization of standards-based architectures (i.e., POSIX, GOSIP, OSE), enabling technologies (i.e., CALS, MLS), and tools (I-CASE).

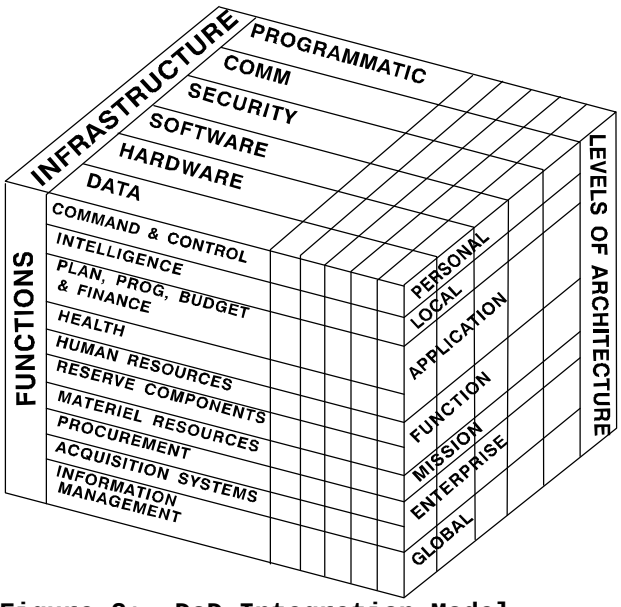

Figure 2: **DoD Integration Model**

Figure 2 illustrates this view of integration. With integration addressed in this manner, the Department-wide Enterprise will provide an information resource which totally supports the missions of DoD.